



REPLACEMENT SHEET

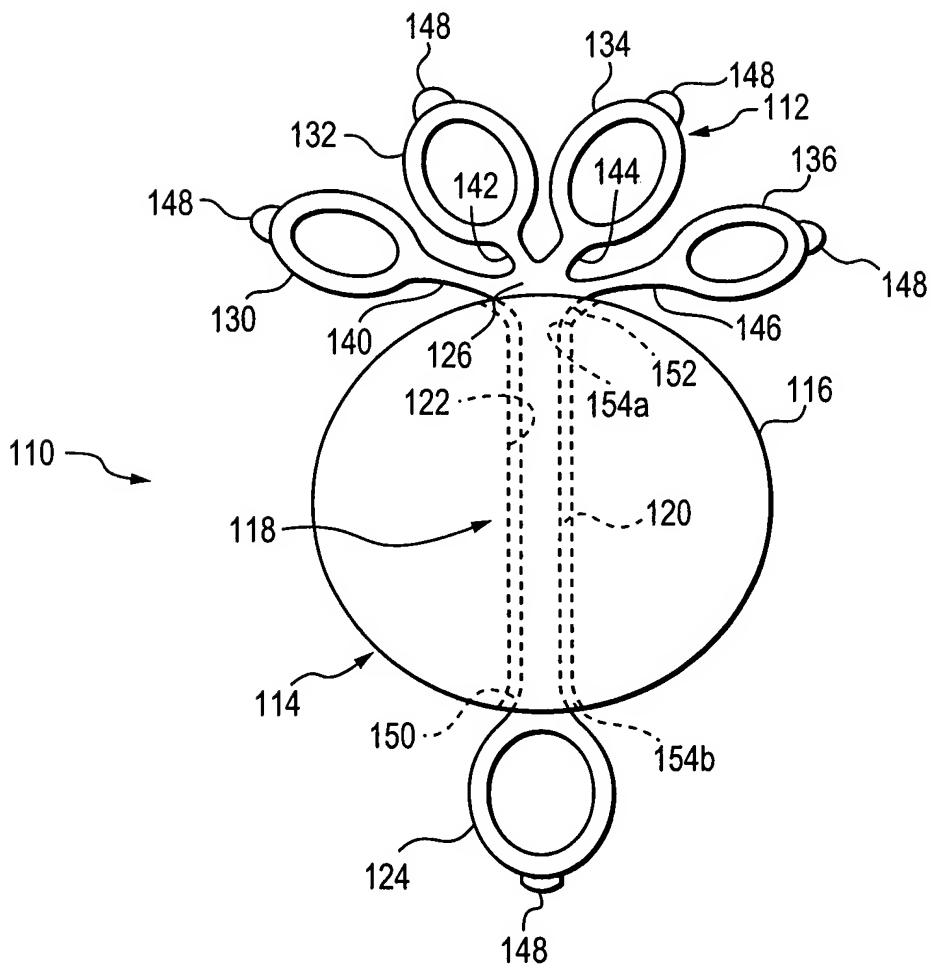


FIG. 1
PRIOR ART

REPLACEMENT SHEET

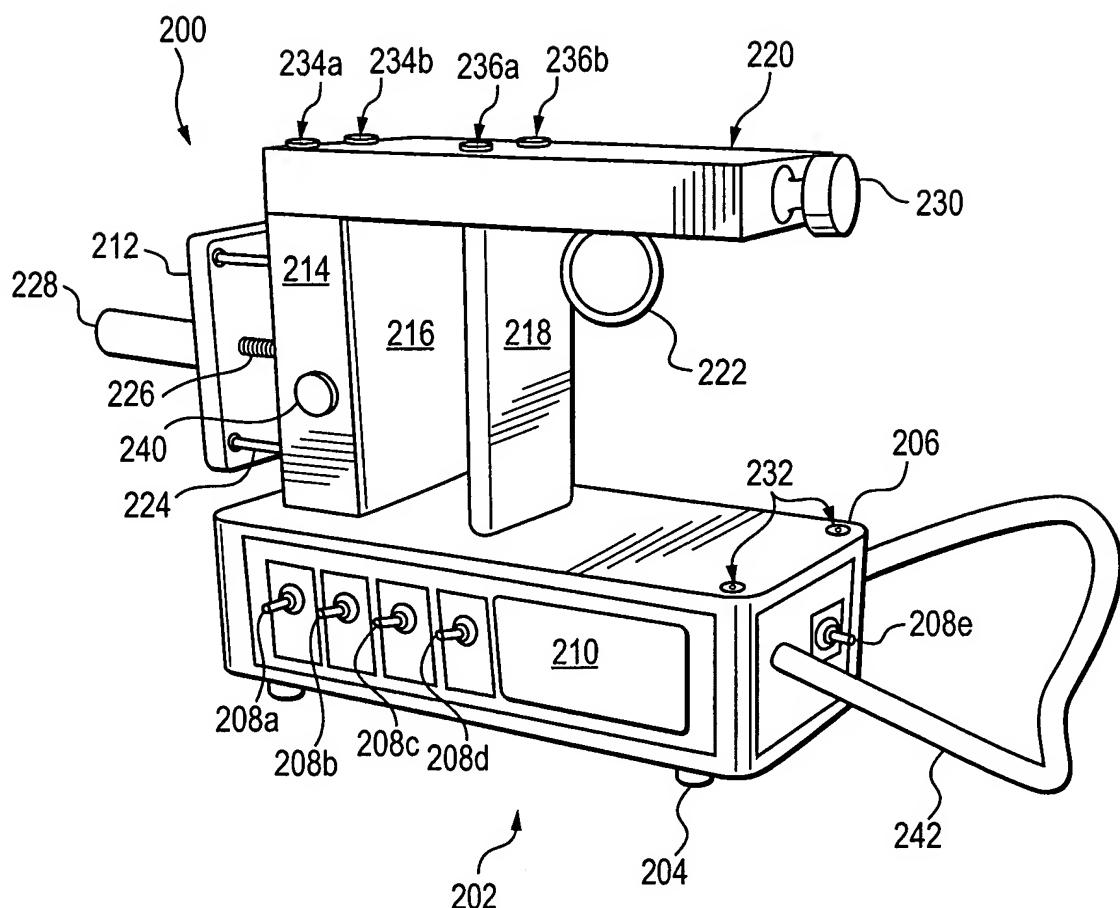


FIG. 2A

REPLACEMENT SHEET

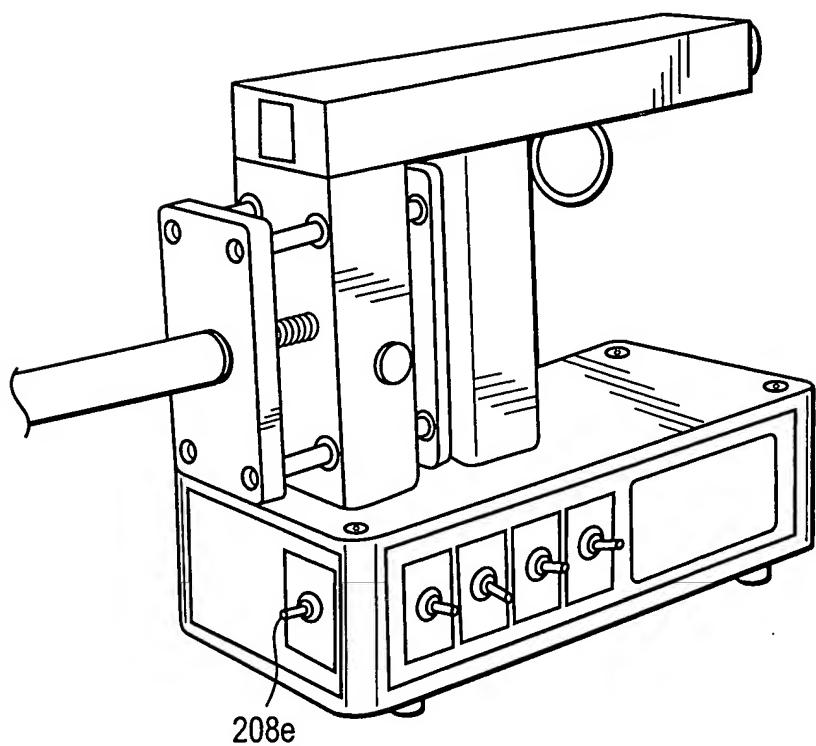


FIG. 2B

REPLACEMENT SHEET

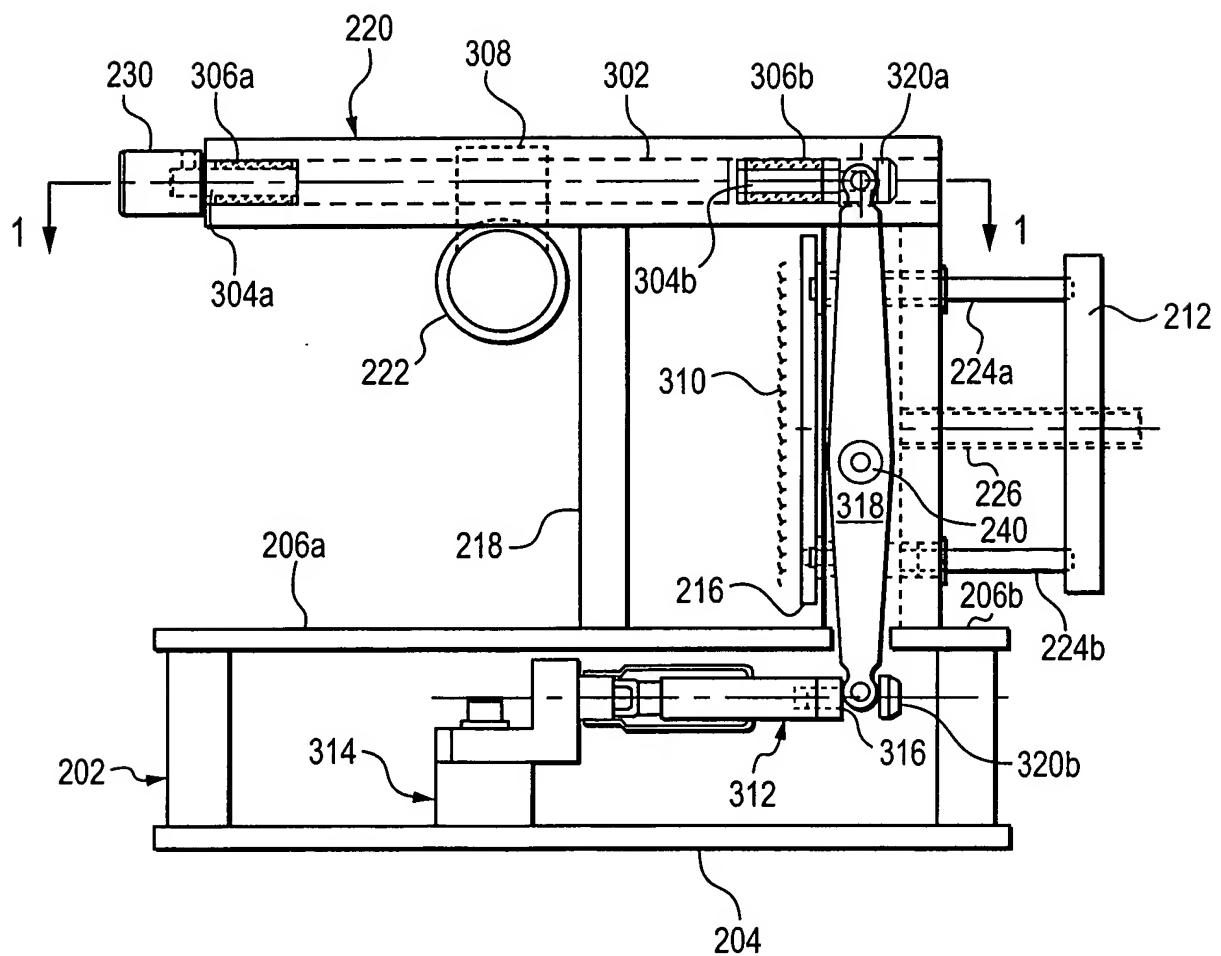


FIG. 3

REPLACEMENT SHEET

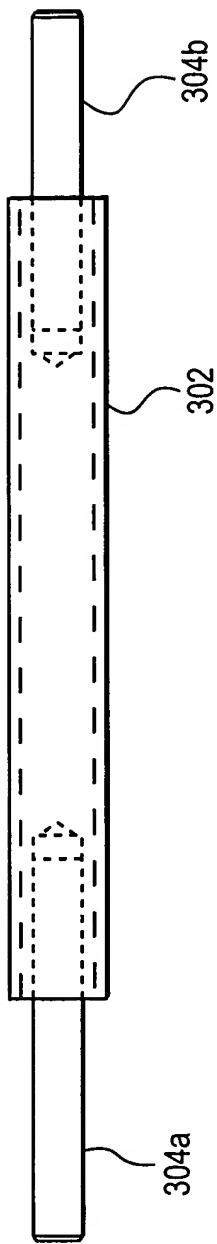


FIG. 4

REPLACEMENT SHEET

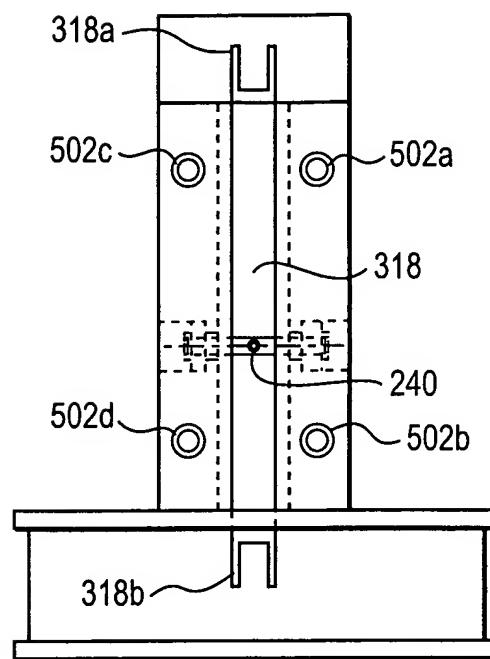


FIG. 5

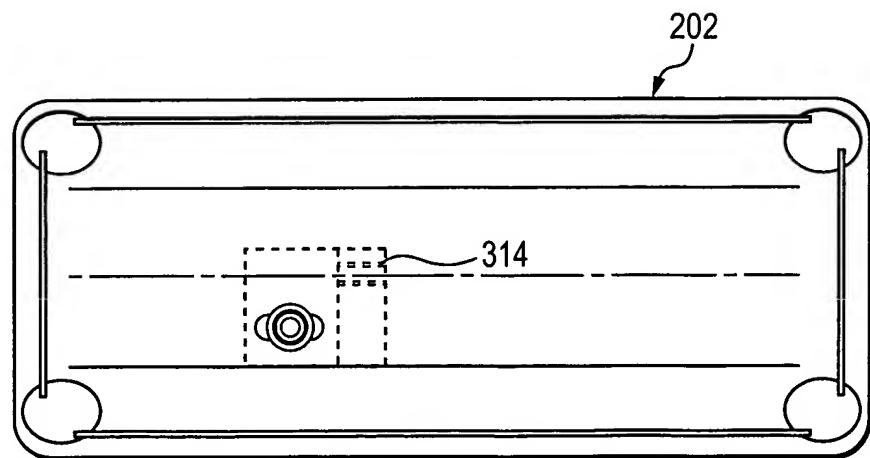


FIG. 6

REPLACEMENT SHEET

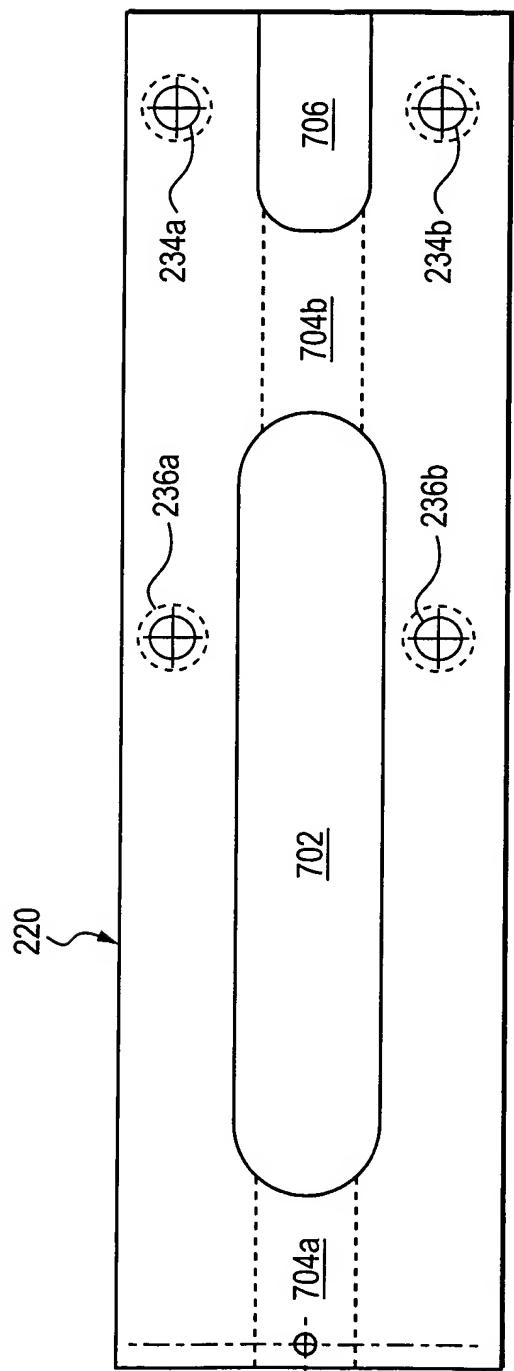


FIG. 7A

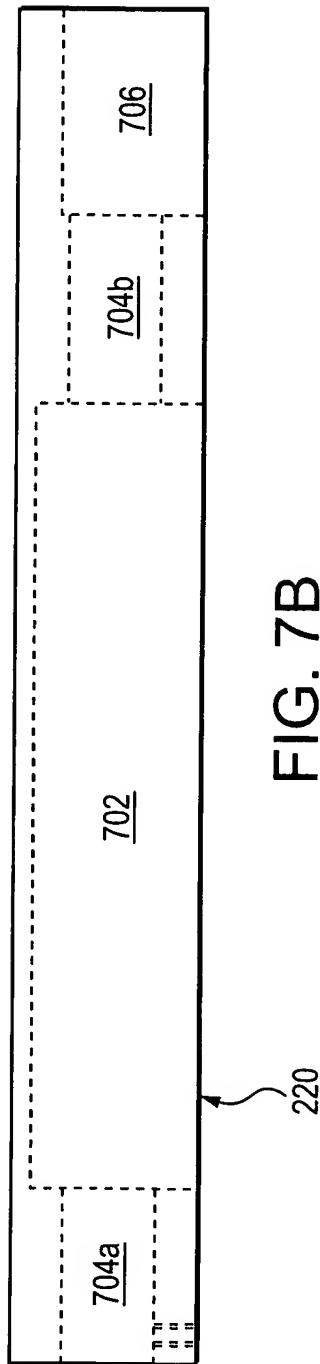


FIG. 7B

REPLACEMENT SHEET

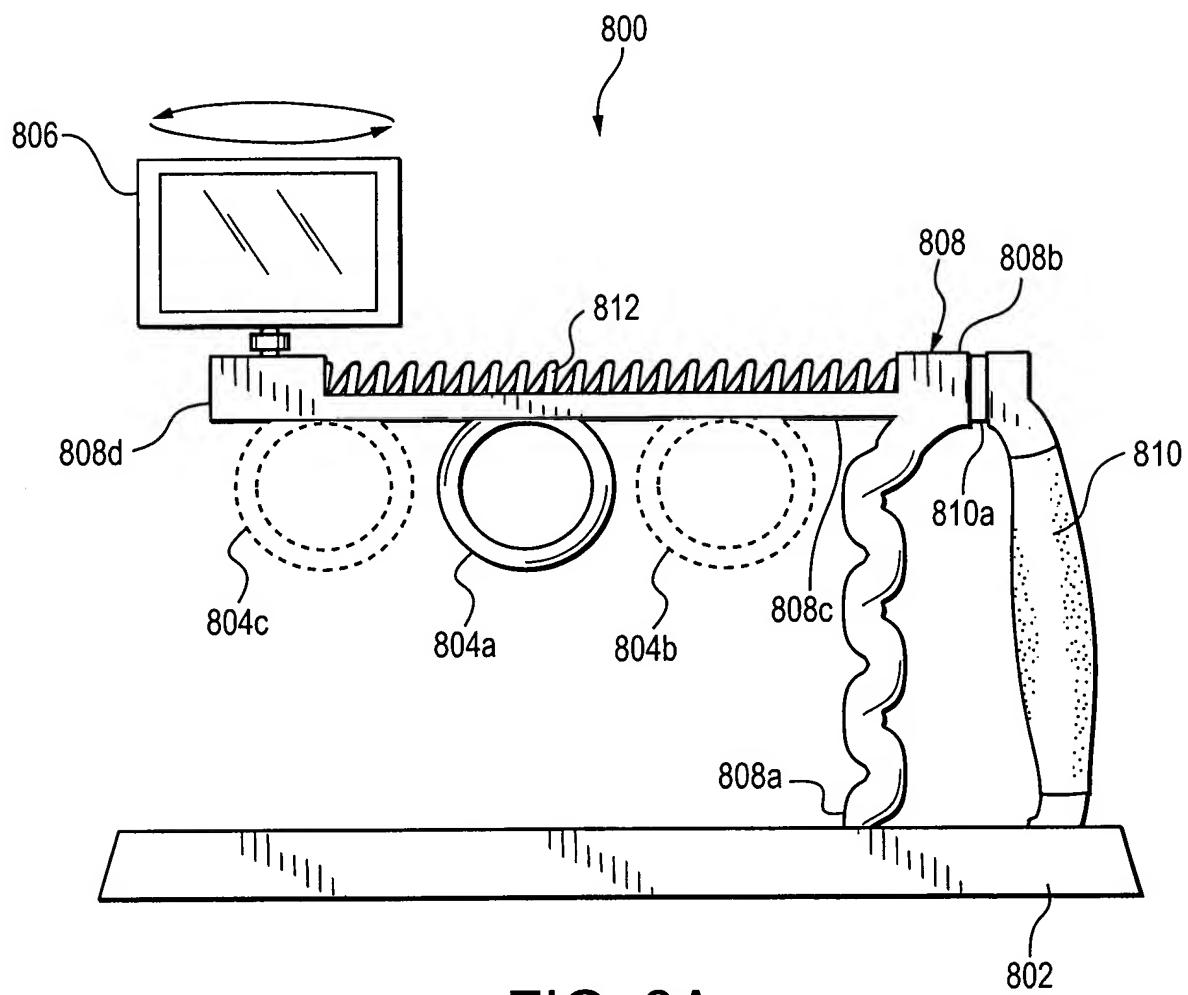


FIG. 8A

REPLACEMENT SHEET

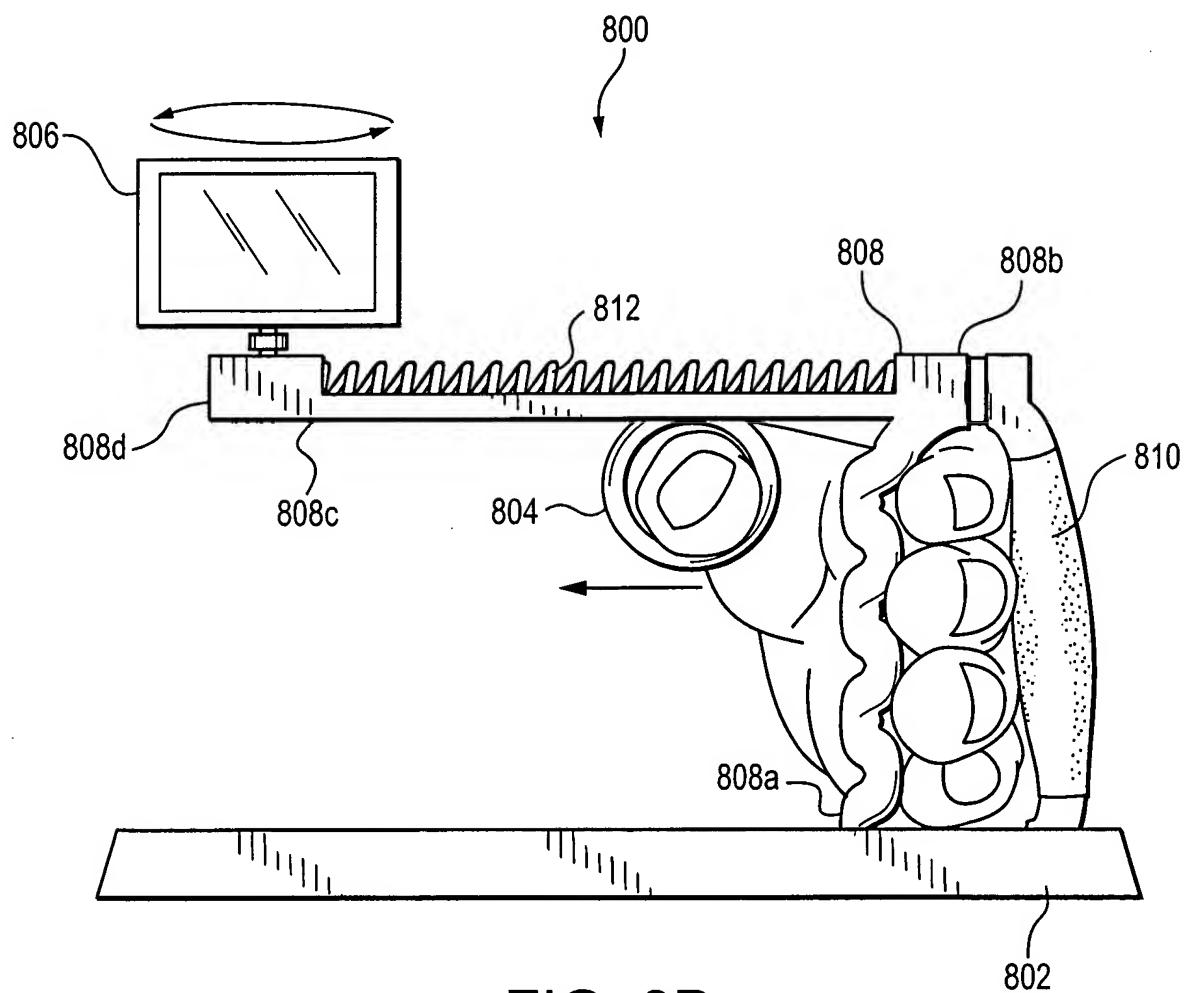


FIG. 8B

REPLACEMENT SHEET

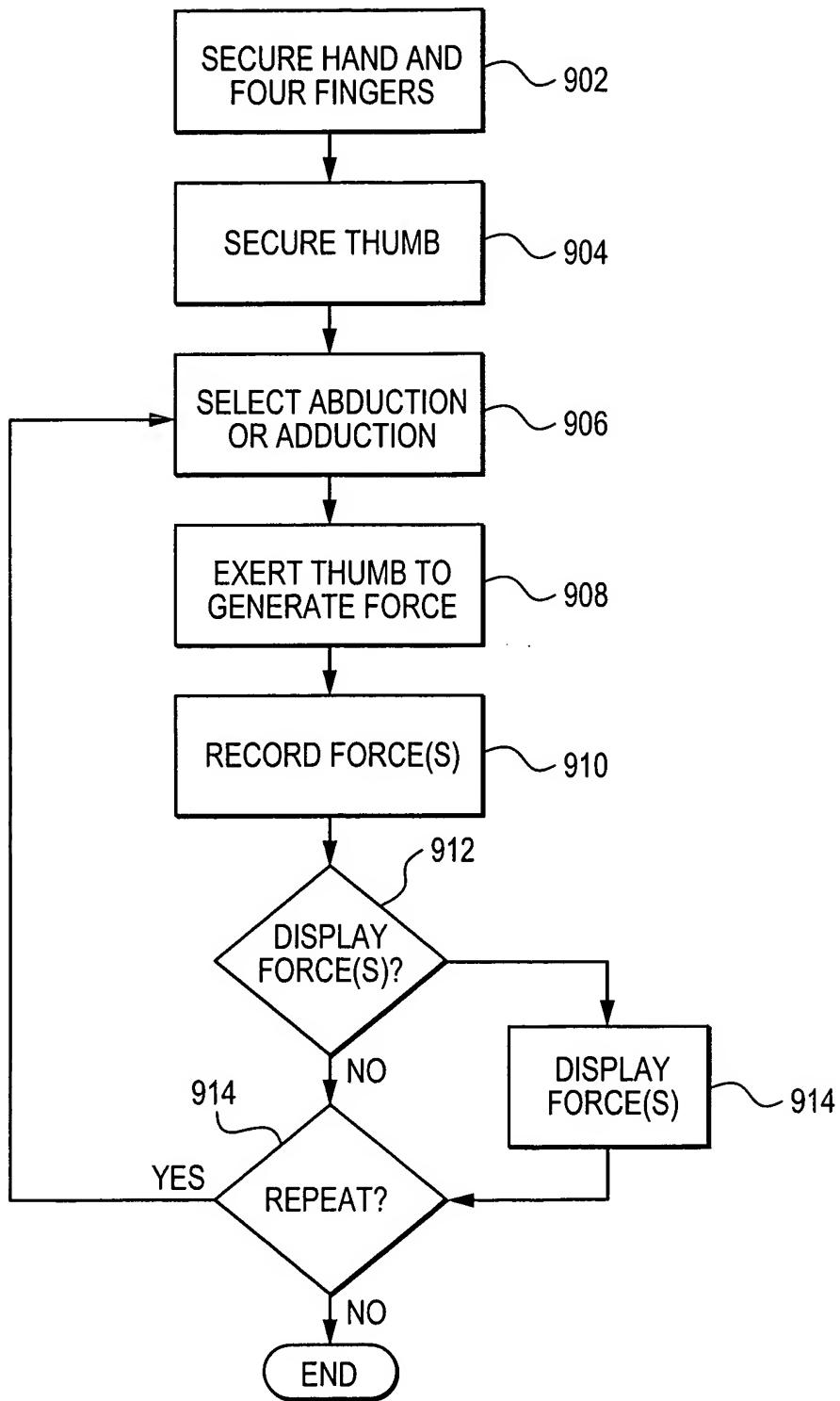


FIG. 9

REPLACEMENT SHEET

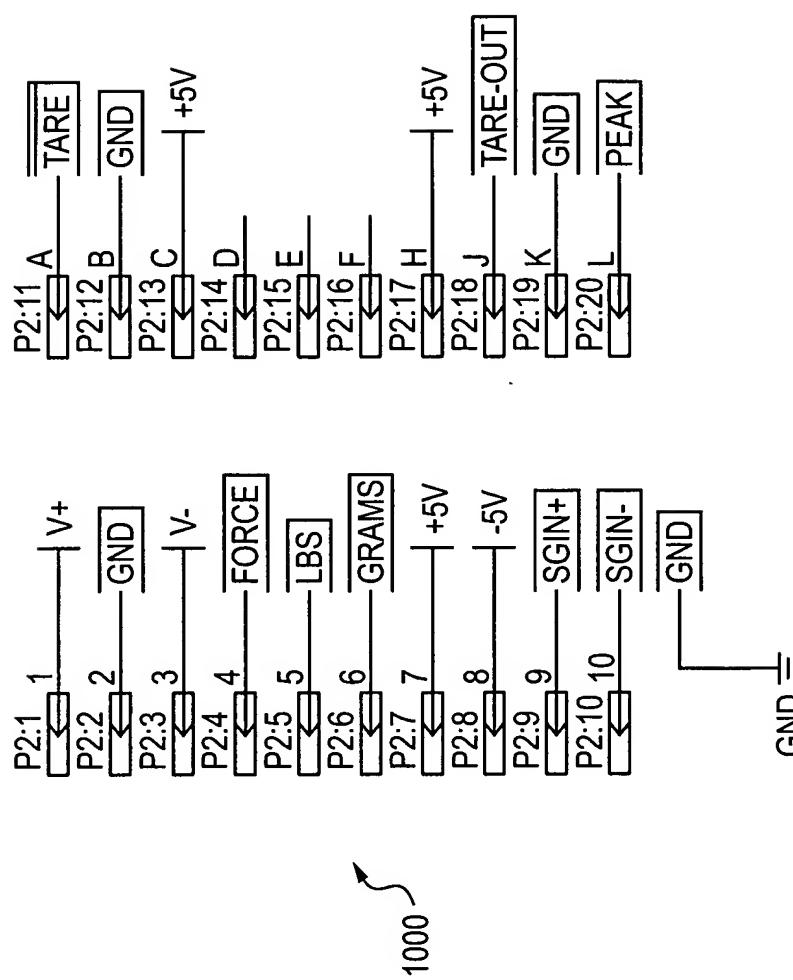


FIG. 10

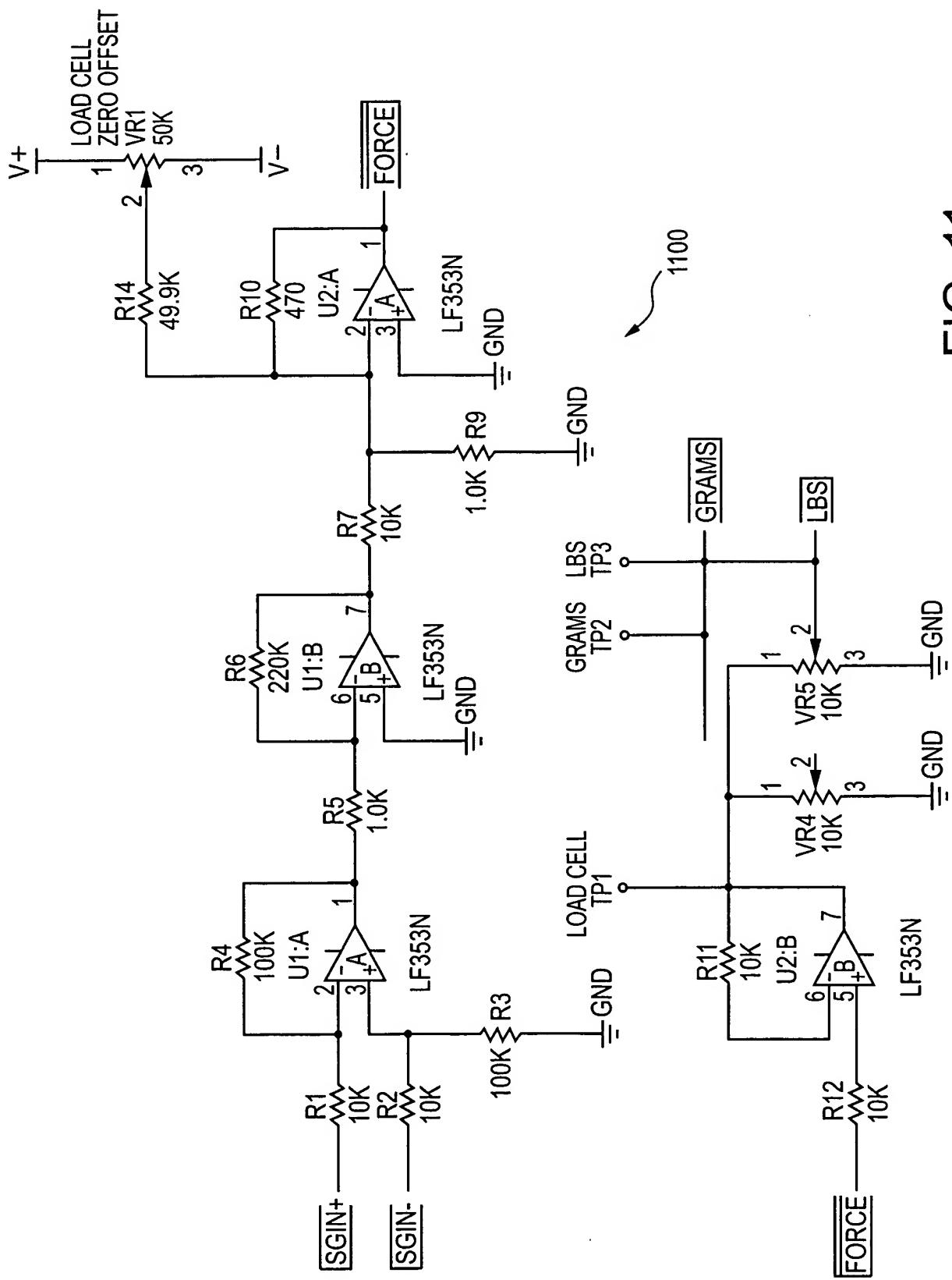


FIG. 11

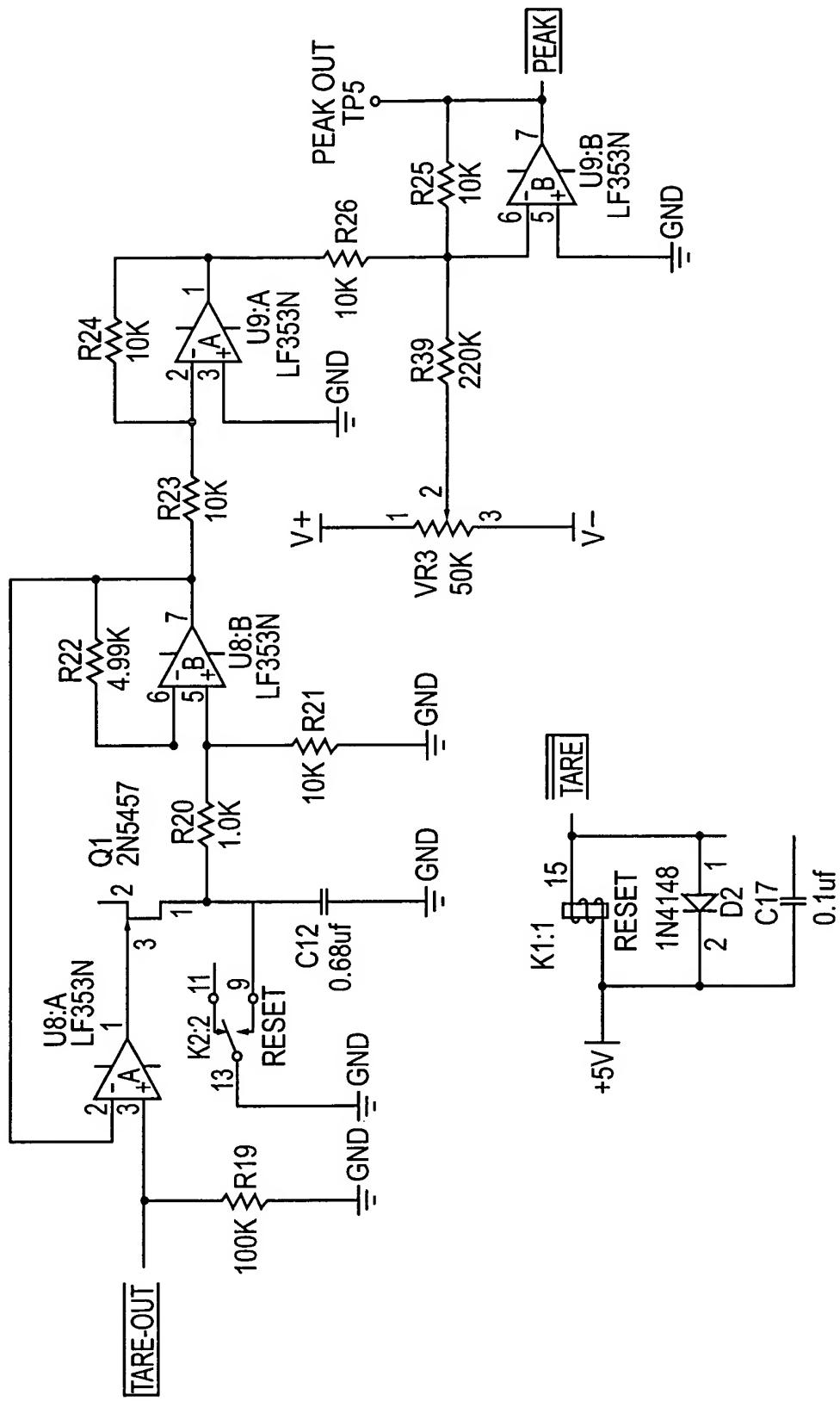


FIG. 12

REPLACEMENT SHEET

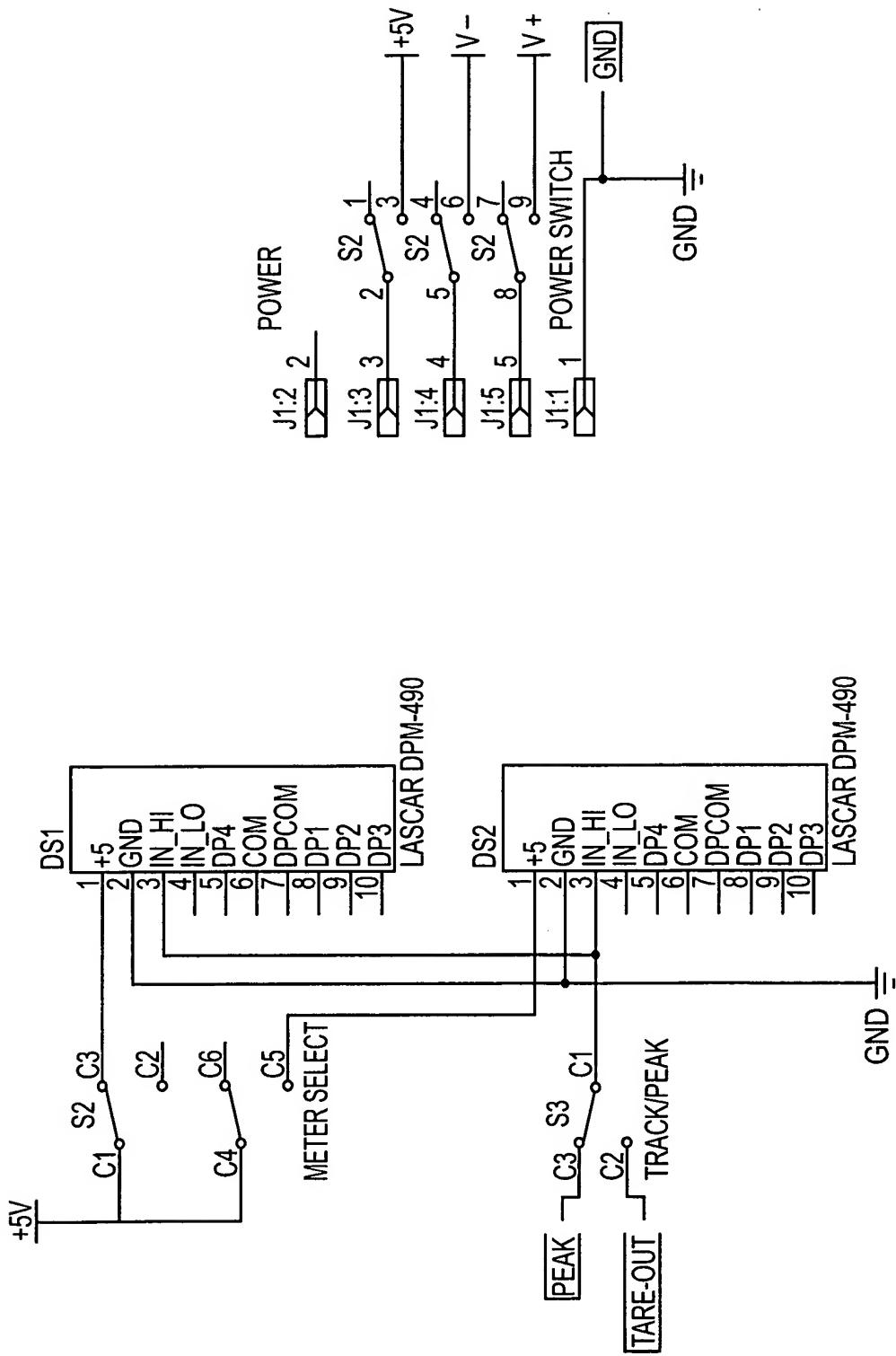


FIG. 13

FIG. 14

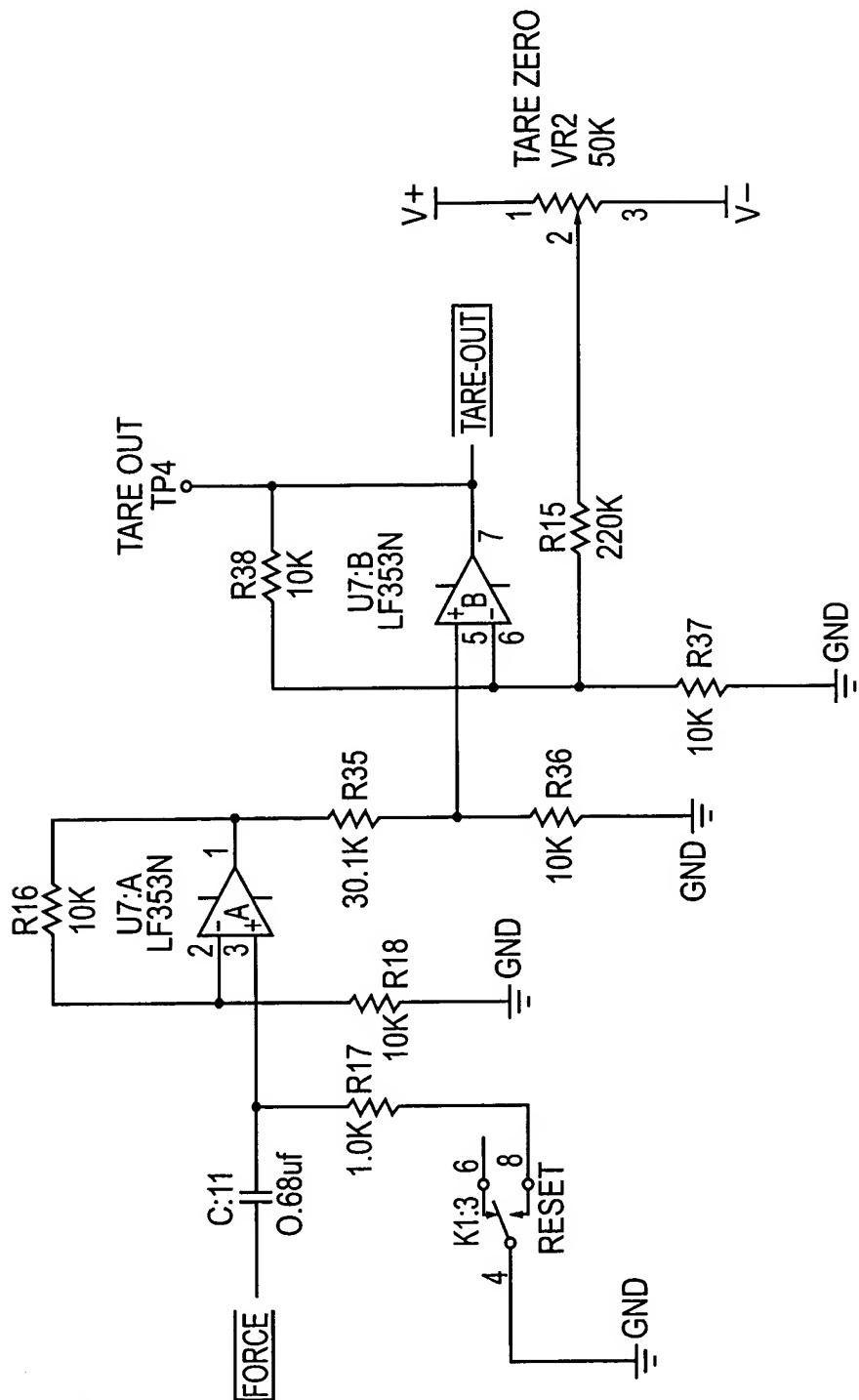


FIG. 15

REPLACEMENT SHEET

AGE	CHARACTERISTICS OF SUBJECTS: AGE, WEIGHT, SEX FOR RIGHT DOMINANT MALE-WEIGHT						TOTAL		
	50-99	100-124	125-149	150-174	175-199	200-224			
5 TO 9	2	12	9	10	3	2	23		
10 TO 14			3	16	5		22		
15 TO 19			2	8	11		26		
20 TO 24			2	6	11		24		
25 TO 29			2	7	11		21		
30 TO 34			1	3	4	1	19		
35 TO 39			1	4	3	3	25		
40 TO 44			1	3	9	2	25		
45 TO 49			1	4	12	7	26		
50 TO 54			1	2	12	1	20		
55 TO 59			2	6	10	1	23		
60 TO 64			3	7	9	3	21		
65 TO 69			4	8	6	3	21		
TOTAL	2	12	38	77	99	32	275		
FEMALE-WEIGHT									
AGE	50-99	100-124	125-149	150-174	175-199	200-224	225-249	TOTAL	GRAND TOTAL
5 TO 9	2	2						4	4
10 TO 14	3	17	4					24	47
15 TO 19		8	13	2				23	45
20 TO 24		4	15	3	2			24	50
25 TO 29	1	8	8	6	1			25	49
30 TO 34			12	4	6			31	43
35 TO 39	1	8	10	7	4			21	56
40 TO 44			9	8	2	1		24	40
45 TO 49			8	15	2	1		20	46
50 TO 54			4	13	2			20	40
55 TO 59			11	6	3			1	43
60 TO 64			5	8	6			20	42
65 TO 69			5	9	7			21	42
TOTAL	5	45	104	81	33	4	3	275	

FIG. 16

REPLACEMENT SHEET

JOINT AGE WEIGHT ABDUCTION-RIGHT

AGE	JOINT AGE WEIGHT ABDUCTION-RIGHT MALE-WEIGHT							JOINT AGE WEIGHT ABDUCTION-RIGHT FEMALE-WEIGHT						
	50-99	100-124	125-149	150-174	175-199	200-224	225-249	250-300	50-99	100-124	125-149	150-174	175-199	200-224
5 TO 9														
10 TO 14	2.6	3.1							1.9	2.5	2.7			
15 TO 19		3.8	4.9	5.3						2.8	2.7			
20 TO 24		4.3	6.0	6.8						3.7	3.0	2.6		
25 TO 29			5.8	6.2	5.4					2.2	3.3	3.5		
30 TO 34			4.4	5.7							3.1	3.1	3.0	
35 TO 39			5.1	5.9	6.7					2.7	3.1	2.9	4.0	
40 TO 44			4.2	4.6	5.4	5.4					2.9	2.9		
45 TO 49			4.5	5.2	6.1						2.9	3.0		
50 TO 54				5.3	6.8	6.9					3.3	2.5		
55 TO 59			3.3	5.0							2.9	3.2	3.0	
60 TO 64		4.0	3.8	3.5	5.7						1.9	2.7	2.9	
65 TO 69		3.3	3.7	4.4	4.4						2.5	2.7	3.1	
	ANGLE=30°							ANGLE=30°						
5 TO 9														
10 TO 14	2.2	2.6							1.3	2.0	2.2			
15 TO 19		3.3	4.4	4.4						2.4	2.3			
20 TO 24		4.0	5.4	5.9						3.0	2.6	2.2		
25 TO 29			5.2	5.6	4.3					1.7	2.9	2.8		
30 TO 34			3.8	4.8							2.4	2.4	2.4	
35 TO 39			3.8	5.1	5.8					2.0	2.5	2.4	3.6	
40 TO 44			2.8	3.9	4.2	4.7					2.6	2.4		
45 TO 49			3.8	4.8	5.3						2.4	2.6		
50 TO 54				4.8	6.4	6.3					3.0	2.1		
55 TO 59			2.9	4.3							2.5	2.7	2.6	
60 TO 64		3.8	3.3	3.1	4.9						1.5	2.5	2.5	
65 TO 69		3.0	3.3	4.1	3.7						2.1	2.3	2.7	
	ANGLE=45°							ANGLE=45°						
5 TO 9														
10 TO 14	1.5	1.9							0.8	1.2	1.6			
15 TO 19		2.7	3.4	4.3						1.8	1.7			
20 TO 24		3.0	3.9	5.2						2.3	1.9	2.0		
25 TO 29			3.8	4.3	2.8					1.2	2.0	2.2		
30 TO 34			2.9	3.8							2.0	2.2	1.7	
35 TO 39			3.0	3.9	5.6					1.2	2.0	1.9	2.3	
40 TO 44			2.7	3.1	2.9	3.5					1.8	1.8		
45 TO 49			3.4	3.7	3.8						1.7	2.1		
50 TO 54				3.4	3.7	4.2					2.2	1.4		
55 TO 59			2.3	3.1							1.8	2.2	1.9	
60 TO 64		3.0	2.5	2.3	4.1						0.8	1.8	1.7	
65 TO 69		2.2	2.7	3.1	2.8						1.5	1.5	1.9	
	ANGLE=60°							ANGLE=60°						

FIG. 17

REPLACEMENT SHEET

JOINT AGE WEIGHT ABDUCTION-LEFT

AGE	JOINT AGE WEIGHT ABDUCTION-LEFT MALE-WEIGHT								JOINT AGE WEIGHT ABDUCTION-LEFT FEMALE-WEIGHT							
	50-99	100-124	125-149	150-174	175-199	200-224	225-249	250-300	50-99	100-124	125-149	150-174	175-199	200-224		
5 TO 9																
10 TO 14	2.3	2.7							1.6	2.4	2.6					
15 TO 19		3.4	4.7	5.5						2.6	2.4					
20 TO 24		3.9	5.0	6.5						3.2	2.5	2.3				
25 TO 29			5.5	5.7	8.4					2.2	2.7	2.9				
30 TO 34			3.8	5.4							2.6	3.0	2.2			
35 TO 39			4.5	5.5	6.0					2.3	2.7	2.9	3.9			
40 TO 44			3.2	4.3	5.1	4.3					2.2	2.6				
45 TO 49			4.5	4.7	5.5						2.6	2.6				
50 TO 54				4.6	5.8	6.0					1.9	2.2				
55 TO 59			3.3	4.0							2.3	2.7	3.0			
60 TO 64		3.5	3.3	3.0	5.0						1.7	2.3	2.5			
65 TO 69		3.0	3.2	3.5	4.1						1.9	2.3	3.0			
	ANGLE=30°								ANGLE=30°							
5 TO 9																
10 TO 14	2.0	2.1							1.3	2.0	2.5					
15 TO 19		2.5	4.2	4.3						2.5	2.0					
20 TO 24		3.4	4.3	4.6						2.2	2.2	1.7				
25 TO 29			4.9	5.1	5.4					1.7	2.6	2.6				
30 TO 34			3.1	4.5							2.4	2.7	2.0			
35 TO 39			3.9	4.8	5.4					2.0	2.5	2.0	3.2			
40 TO 44			2.7	3.5	4.2	4.0					1.8	1.9				
45 TO 49			3.2	4.0	4.7						2.2	2.3				
50 TO 54				4.1	4.8	5.5					2.0	2.0				
55 TO 59			2.8	3.8							2.0	2.3	2.6			
60 TO 64		3.1	3.0	2.4	4.4						1.2	2.0	2.0			
65 TO 69		2.6	2.8	3.0	3.4						1.5	2.0	2.5			
	ANGLE=45°								ANGLE=45°							
5 TO 9																
10 TO 14	1.4	1.6							0.9	1.2	1.6					
15 TO 19		2.3	3.2	3.5						2.0	1.5					
20 TO 24		2.9	3.3	3.7						1.8	1.5	1.2				
25 TO 29			3.6	4.2	3.2					1.1	1.9	1.9				
30 TO 34			2.6	3.9							1.7	1.8	1.7	1.7		
35 TO 39			2.7	3.5	4.8					1.2	1.8	1.4	2.7			
40 TO 44			2.0	2.9	3.1	3.1					1.2	1.6				
45 TO 49			3.2	2.8	3.5						1.6	1.7				
50 TO 54				3.0	3.8	4.4					1.5	1.5				
55 TO 59			2.0	2.9							1.5	1.5	1.9			
60 TO 64		2.8	2.3	1.8	3.5						0.8	1.5	1.5			
65 TO 69		1.7	2.2	2.1	2.7						1.2	1.4	1.9			
	ANGLE=60°								ANGLE=60°							

FIG. 18

REPLACEMENT SHEET

JOINT AGE WEIGHT ADDUCTION-RIGHT

AGE	JOINT AGE WEIGHT ADDUCTION-RIGHT MALE-WEIGHT									JOINT AGE WEIGHT ADDUCTION-RIGHT FEMALE-WEIGHT								
	50-99	100-124	125-149	150-174	175-199	200-224	225-249	250-300	50-99	100-124	125-149	150-174	175-199	200-224				
5 TO 9																		
10 TO 14	11.8	12.8							10.9	10.7	11.9							
15 TO 19		14.3	16.2	16.4						11.0	13.5							
20 TO 24		15.2	17.4	18.5						13.2	14.4	14.0						
25 TO 29			17.8	19.7	20.8					10.8	15.2	16.0						
30 TO 34			17.4	17.4							12.9	16.4	16.2					
35 TO 39			18.5	16.9	19.2					12.0	14.1	14.4	12.2					
40 TO 44			17.1	16.0	20.9	18.0					13.7	12.9						
45 TO 49			15.3	17.1	18.2						12.0	14.8						
50 TO 54				16.5	17.3	15.6					13.1	13.8						
55 TO 59			14.3	16.1							13.5	16.2	15.6					
60 TO 64		12.9	13.8	12.4	16.3						12.0	13.0	13.3					
65 TO 69		12.6	13.4	15.5	13.1						11.0	12.3	14.1					
	ANGLE=30°									ANGLE=30°								
5 TO 9										11.9	11.3	12.8						
10 TO 14	11.9	13.3								12.7	15.0							
15 TO 19		15.9	18.0	18.6						14.9	15.1	15.2						
20 TO 24		18.0	18.4	20.7						11.6	16.6	17.8						
25 TO 29			19.1	21.3	20.9						14.2	17.4	17.2					
30 TO 34			19.4	18.8						12.6	14.9	15.7	15.4					
35 TO 39			20.7	18.4	19.2						14.5	13.7						
40 TO 44			17.5	16.2	19.9	20.4					13.4	16.1						
45 TO 49			16.9	19.1	19.4						15.7	15.1						
50 TO 54				18.2	18.9	16.9					15.1	16.9	17.5					
55 TO 59			14.6	17.5							11.9	14.9	14.7					
60 TO 64		12.4	15.6	13.6	17.1						12.7	12.8	15.1					
65 TO 69		13.5	14.6	16.5	15.4													
	ANGLE=45°									ANGLE=45°								
5 TO 9										12.5	13.2	14.2						
10 TO 14	13.2	14.2								13.4	16.0							
15 TO 19		17.5	19.3	19.1						15.8	16.7	14.9						
20 TO 24		20.3	20.5	21.7						12.3	18.4	18.9						
25 TO 29			21.2	22.2	22.1						15.0	19.3	15.7					
30 TO 34			20.3	20.9						14.1	17.1	17.1	14.4					
35 TO 39			21.8	20.3	20.3						16.8	14.6						
40 TO 44			20.7	18.1	22.1	21.2					14.4	16.4						
45 TO 49			18.5	20.5	21.1	19.0					15.5	15.8						
50 TO 54				20.3	21.1						15.7	17.6	17.9					
55 TO 59			15.4	18.8							12.7	15.6	15.8					
60 TO 64		14.2	16.1	15.2	19.1						13.2	14.3	16.0					
65 TO 69		14.8	15.8	17.6	16.4													
	ANGLE=60°									ANGLE=60°								

FIG. 19

REPLACEMENT SHEET

JOINT AGE WEIGHT ADDUCTION-LEFT

AGE	JOINT AGE WEIGHT ADDUCTION-LEFT MALE-WEIGHT							JOINT AGE WEIGHT ADDUCTION-LEFT FEMALE-WEIGHT						
	50-99	100-124	125-149	150-174	175-199	200-224	225-249	250-300	50-99	100-124	125-149	150-174	175-199	200-224
5 TO 9														
10 TO 14	10.8	12.5							10.1	10.2	12.4			
15 TO 19		13.9	16.3	19.0						11.5	12.4			
20 TO 24		15.0	16.7	17.0						12.7	13.4	12.7		
25 TO 29			17.2	18.9	14.4					12.1	13.9	14.6		
30 TO 34			17.3	16.8							12.1	15.6	16.0	
35 TO 39			19.5	16.5	17.8					12.2	13.2	14.4	13.2	
40 TO 44			14.5	15.7	18.9	17.9				12.3	12.2			
45 TO 49			15.6	17.3	17.9						10.5	14.0		
50 TO 54				17.2	16.3	15.3					12.7	12.7		
55 TO 59			12.4	15.4							13.1	14.4	13.5	
60 TO 64		11.5	13.5	11.6	16.2						11.1	12.7	12.8	
65 TO 69		12.9	13.3	14.3	14.7						11.0	11.8	12.9	
	ANGLE=30°							ANGLE=30°						
5 TO 9														
10 TO 14	12.1	13.4							11.3	10.2	12.9			
15 TO 19		15.8	18.1	20.9						10.8	13.4			
20 TO 24		16.3	18.3	19.8						13.7	14.4	14.1		
25 TO 29			18.7	21.0	20.6					11.9	15.2	17.2		
30 TO 34			17.0	18.1							13.8	16.9	18.4	
35 TO 39			20.7	18.8	18.2					12.0	14.6	16.5	13.7	
40 TO 44			14.2	15.8	18.5	17.8					12.5	12.1		
45 TO 49			15.7	17.8	18.3						11.1	15.1		
50 TO 54				18.5	17.3	16.6					15.1	13.5		
55 TO 59			13.6	17.6							14.7	14.5	15.8	
60 TO 64		11.2	15.1	13.2	16.5						12.1	13.9	15.1	
65 TO 69		13.3	14.4	16.0	16.8						12.6	13.2	14.3	
	ANGLE=45°							ANGLE=45°						
5 TO 9														
10 TO 14	12.4	14.5							11.6	10.8	13.8			
15 TO 19		17.1	19.2	20.3						11.6	15.4			
20 TO 24		17.7	20.7	20.9						14.7	15.7	14.9		
25 TO 29			20.1	22.3	21.8					11.8	16.5	18.3		
30 TO 34			18.6	19.7							13.9	18.4	16.8	
35 TO 39			21.3	20.2	20.3					12.8	15.2	15.7	14.3	
40 TO 44			16.1	17.3	21.0	19.0					13.6	13.2		
45 TO 49			17.4	20.2	20.9						12.8	16.3		
50 TO 54				20.1	20.1	18.4					16.0	14.6		
55 TO 59			15.3	19.2							16.0	16.4	18.7	
60 TO 64		11.4	15.6	14.4	18.7						13.3	15.8	16.5	
65 TO 69		14.2	15.1	17.9	17.2						13.6	14.4	15.0	
	ANGLE=60°							ANGLE=60°						

FIG. 20

REPLACEMENT SHEET

GRIP STRENGTH BY AGE AND WEIGHT FOR MALE AND FEMALE LEFT AND RIGHT

		MALE LEFT/RIGHT GRIP							
WEIGHT	AGE	50 TO 99	100 TO 124	125 TO 149	150 TO 174	175 TO 199	200 TO 224	225 TO 249	250 TO 300
10 TO 14	10 TO 14	59/66	68/70	93/97	101/104	110/120	129/137		
15 TO 19	15 TO 19			94/110	118/125	114/117	128/132	130/137	
20 TO 24	20 TO 24				105/108	110/114	120/126	126/136	
25 TO 29	25 TO 29				94/96	97/98	105/108	128/139	111/119
30 TO 34	30 TO 34					117/126	96/103	119/125	
35 TO 39	35 TO 39						97/100	106/110	105/113
40 TO 44	40 TO 44						98/101		
45 TO 49	45 TO 49						77/83	95/102	
50 TO 54	50 TO 54						89/92	84/84	
55 TO 59	55 TO 59								
60 TO 64	60 TO 64								
65 TO 69	65 TO 69								

		FEMALE LEFT/RIGHT GRIP							
WEIGHT	AGE	50 TO 99	100 TO 124	125 TO 149	150 TO 174	175 TO 199	200 TO 224	225 TO 249	250 TO 300
10 TO 14	10 TO 14	56/56	63/59	74/70	82/82	83/77	80/74		
15 TO 19	15 TO 19		66/60	77/71					
20 TO 24	20 TO 24		84/78	78/71	81/74				
25 TO 29	25 TO 29		58/51		72/64	81/84		79/75	
30 TO 34	30 TO 34			66/61	79/72		80/73	81/80	
35 TO 39	35 TO 39				65/62		71/69		
40 TO 44	40 TO 44					68/64	75/72		
45 TO 49	45 TO 49					66/65	65/61	77/73	
50 TO 54	50 TO 54					69/64	72/70	71/66	
55 TO 59	55 TO 59					58/54	70/68	69/65	
60 TO 64	60 TO 64							75/69	
65 TO 69	65 TO 69								

FIG. 21

REPLACEMENT SHEET

MALE ABDUCTION BY AGE RIGHT DOMINANT

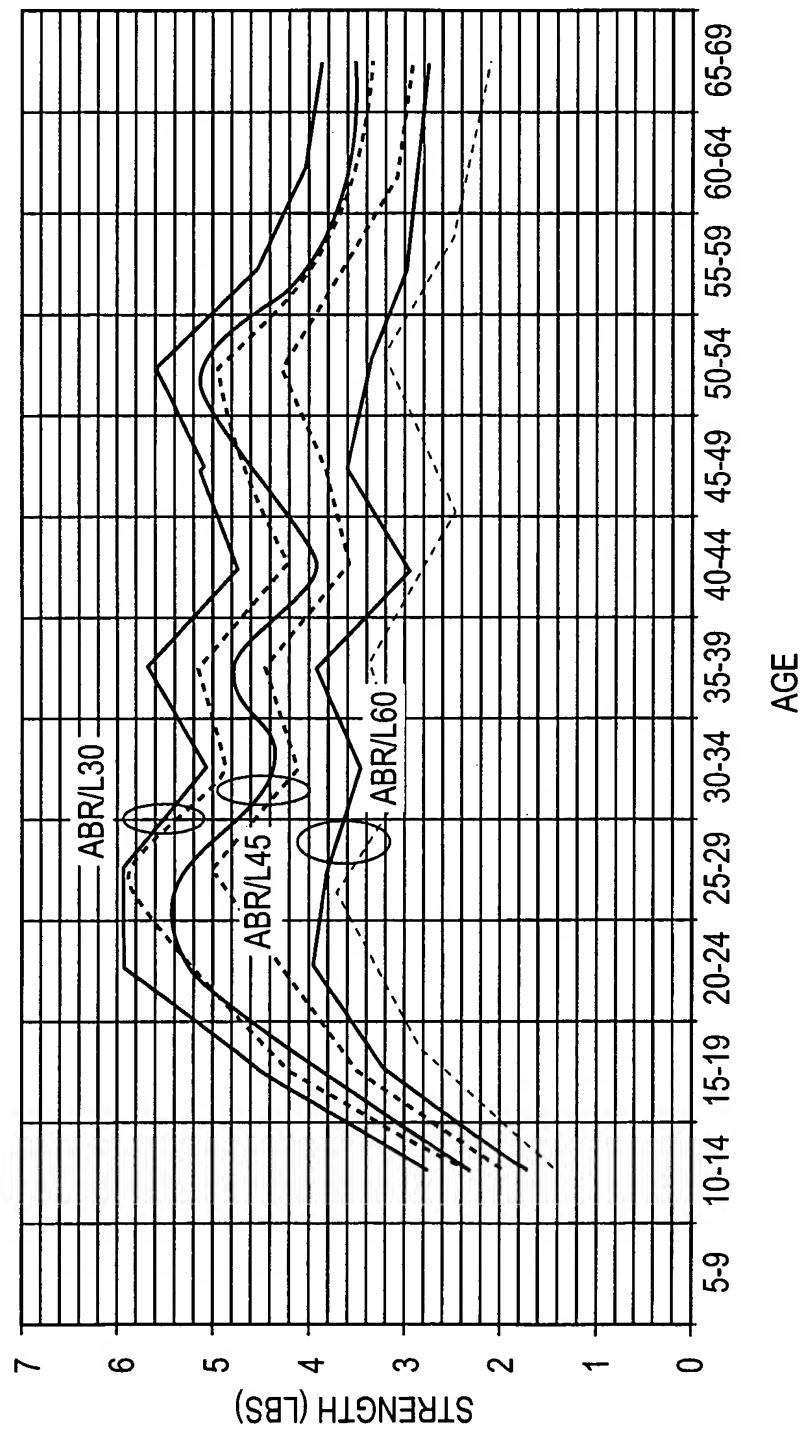


FIG. 22

REPLACEMENT SHEET

FEMALE ABDUCTION BY AGE RIGHT DOMINANT

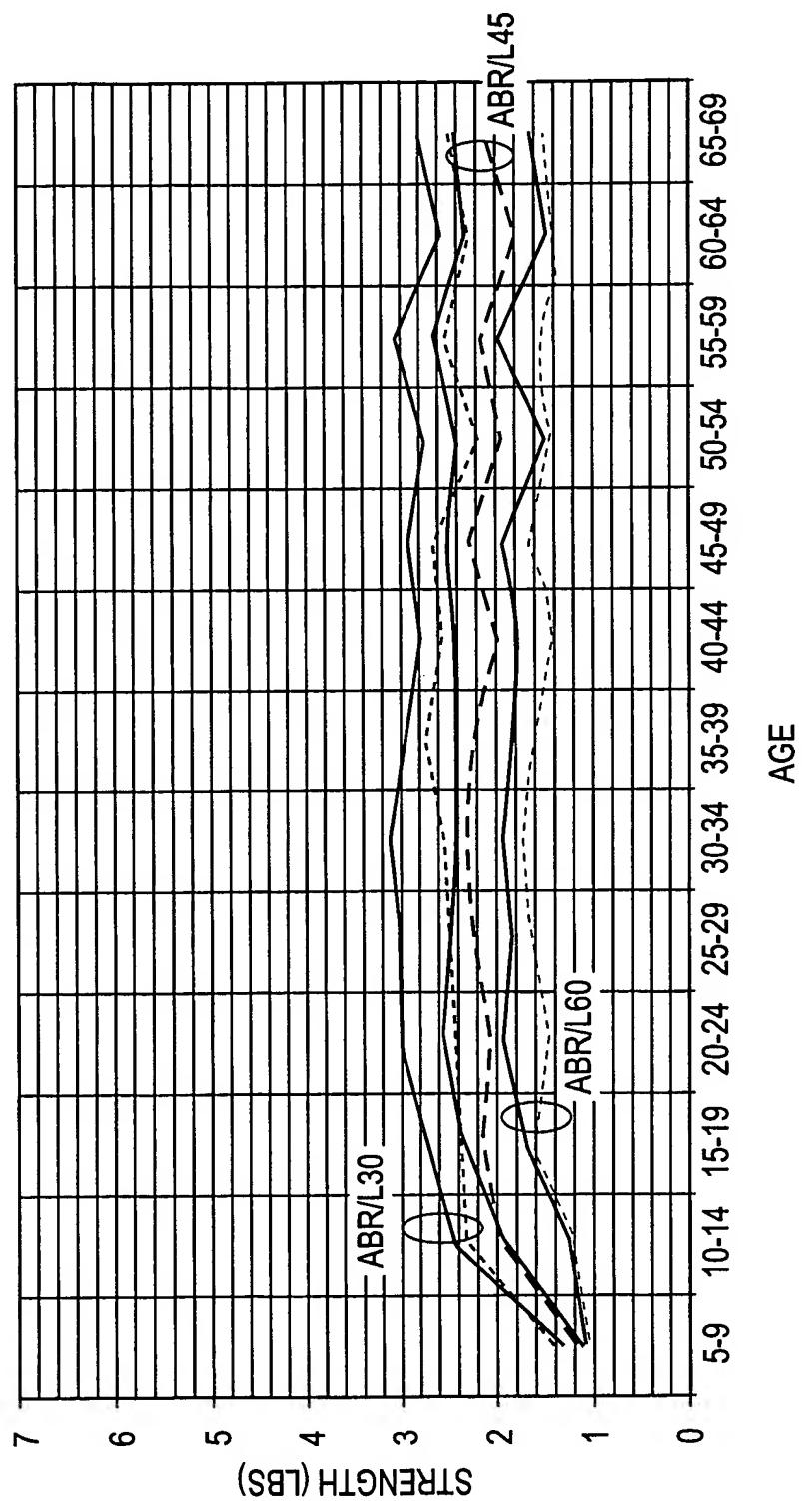


FIG. 23

REPLACEMENT SHEET

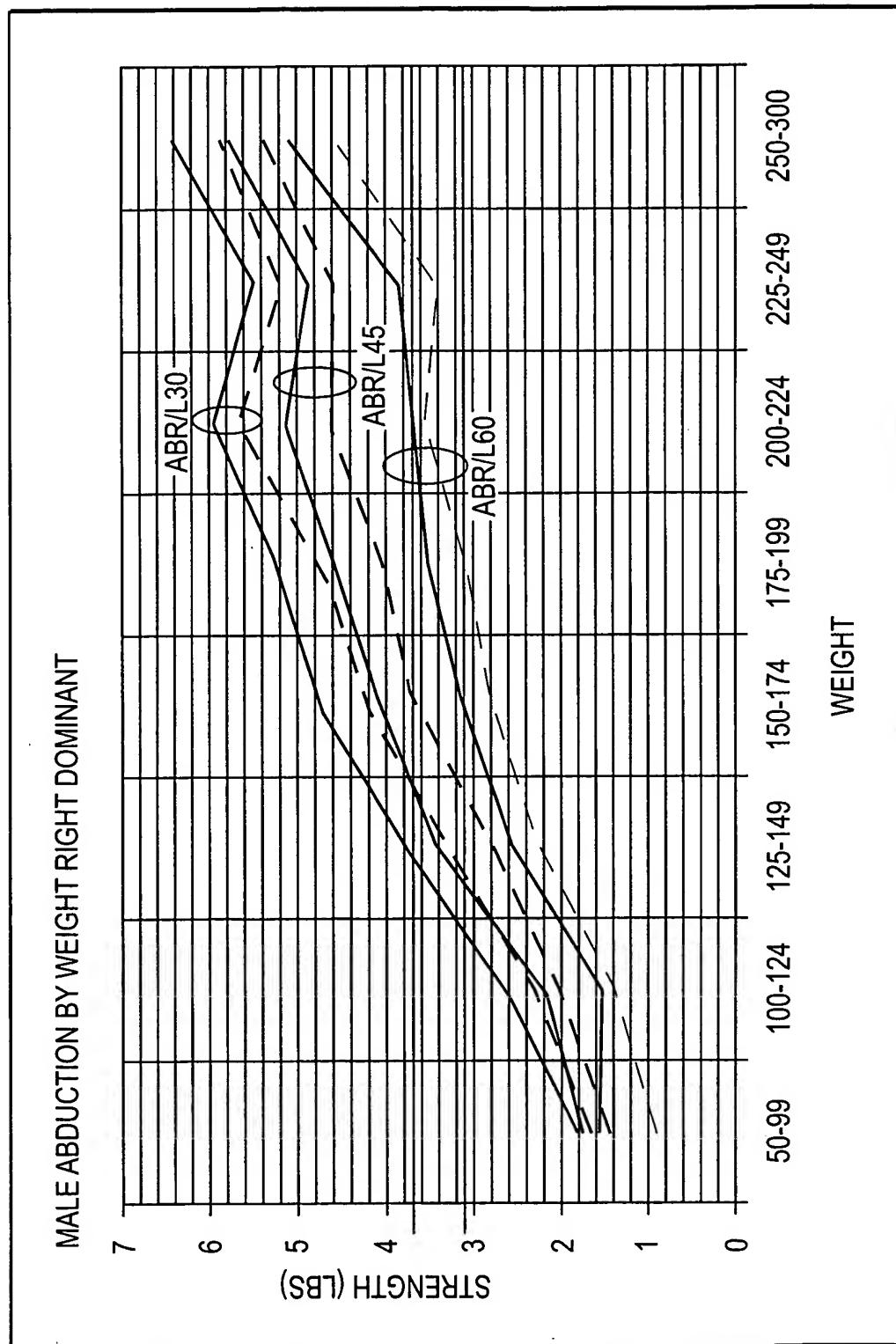


FIG. 24

REPLACEMENT SHEET

FEMALE ABDUCTION BY WEIGHT RIGHT DOMINANT

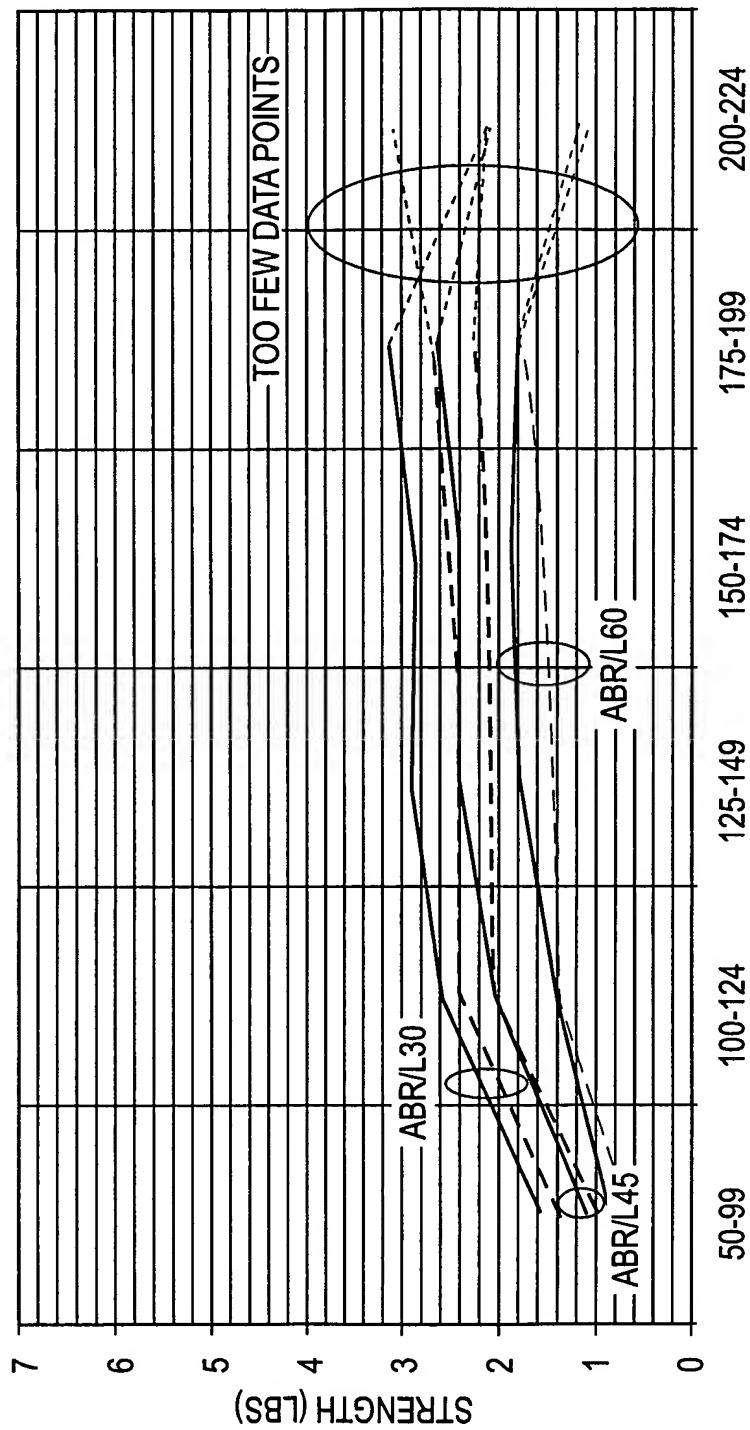


FIG. 25

REPLACEMENT SHEET

MALE ADDUCTION BY AGE RIGHT DOMINANT

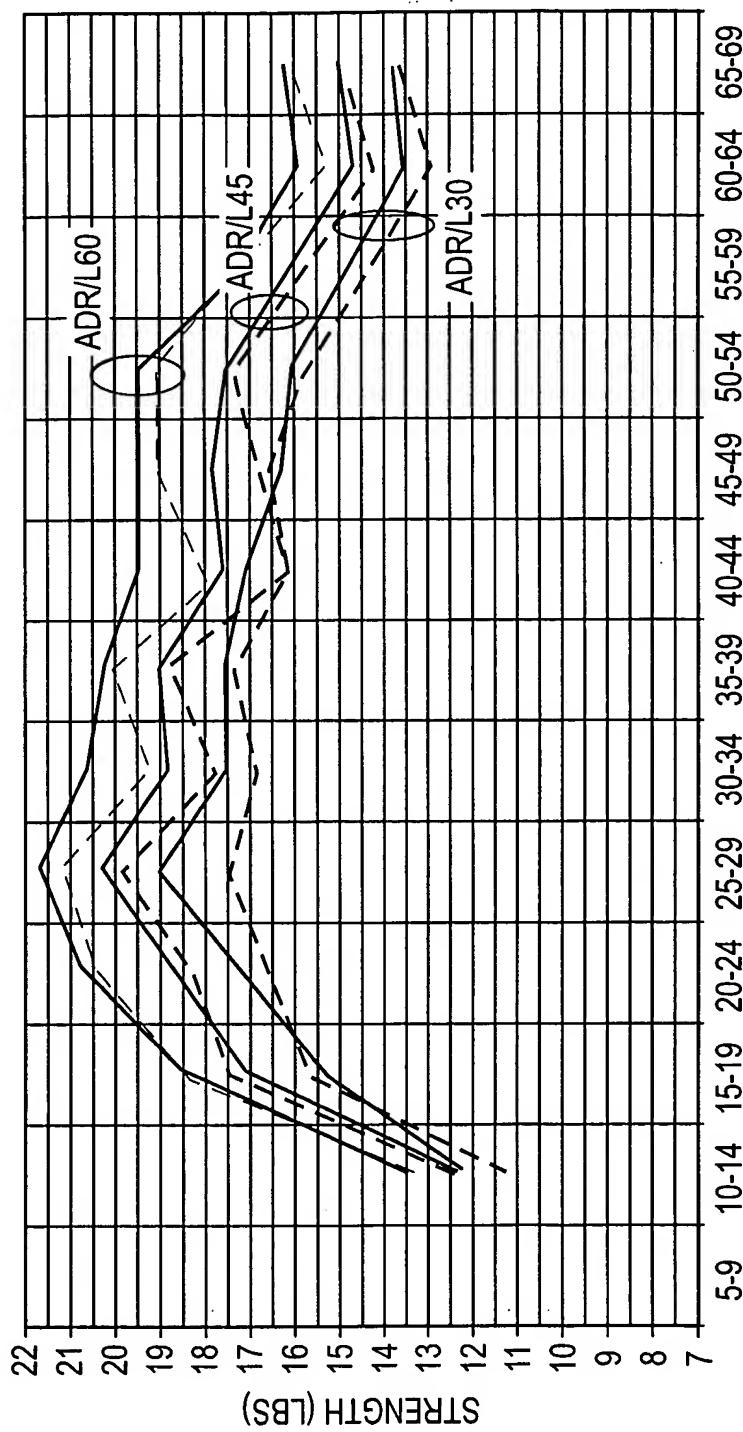


FIG. 26

REPLACEMENT SHEET

FEMALE ADDUCTION BY AGE RIGHT DOMINANT

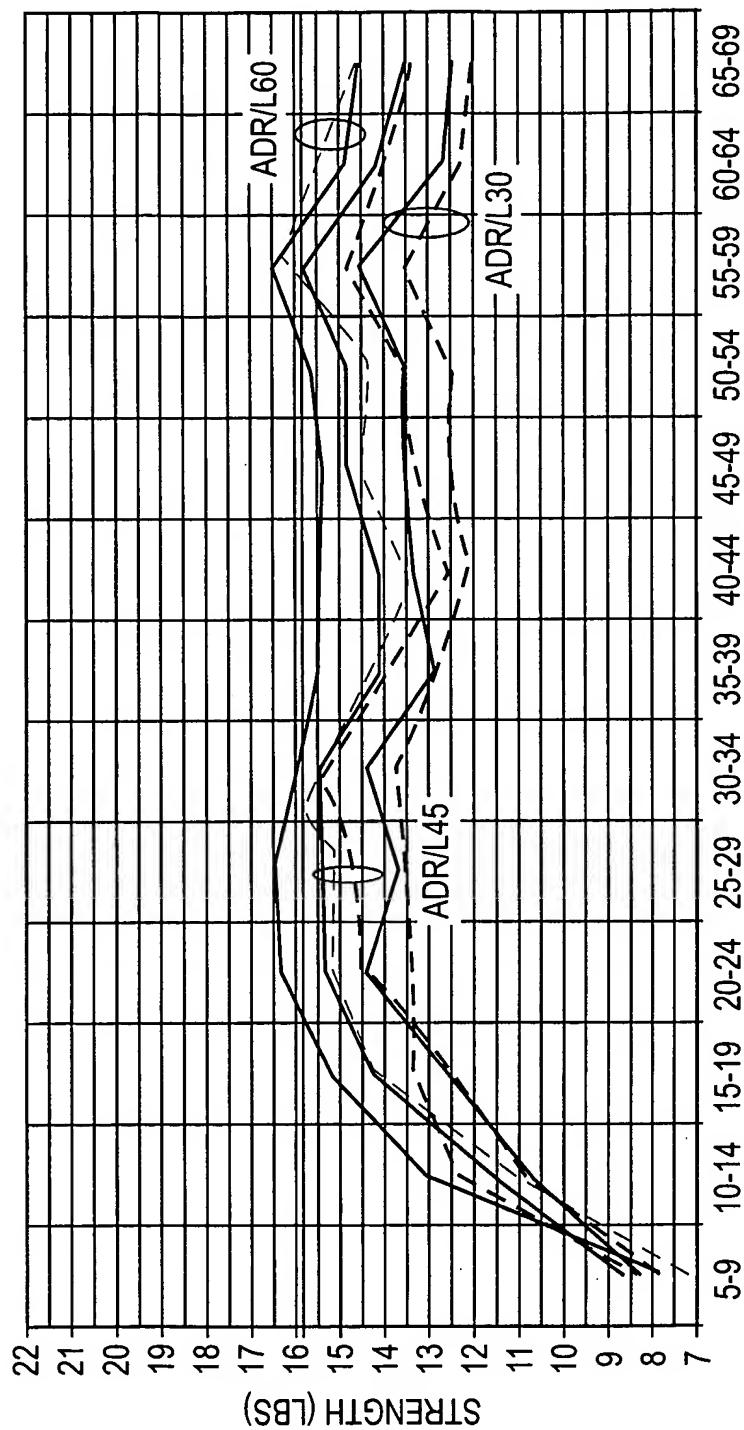


FIG. 27

REPLACEMENT SHEET

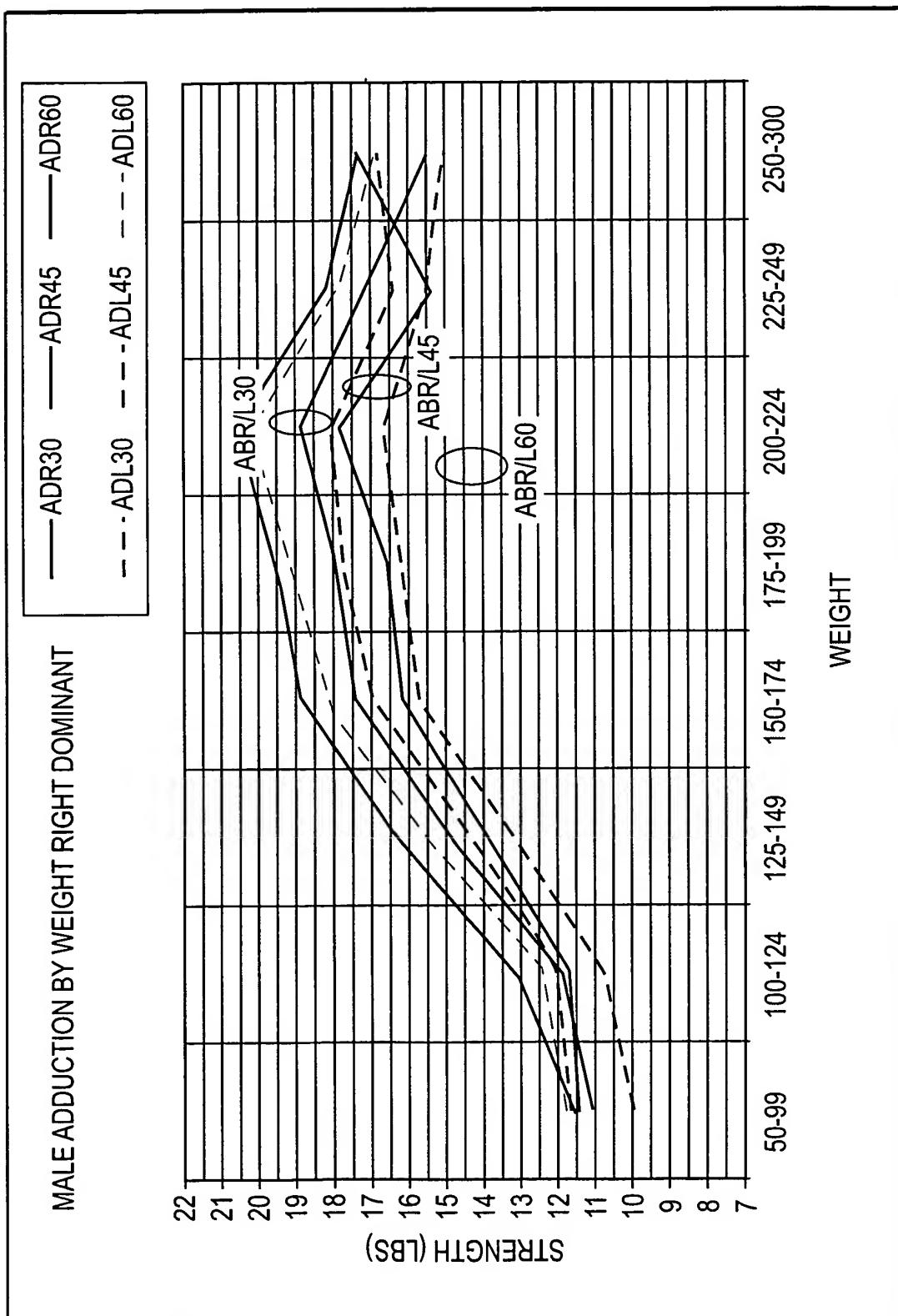


FIG. 28

REPLACEMENT SHEET

FEMALE ADDUCTION BY WEIGHT RIGHT DOMINANT

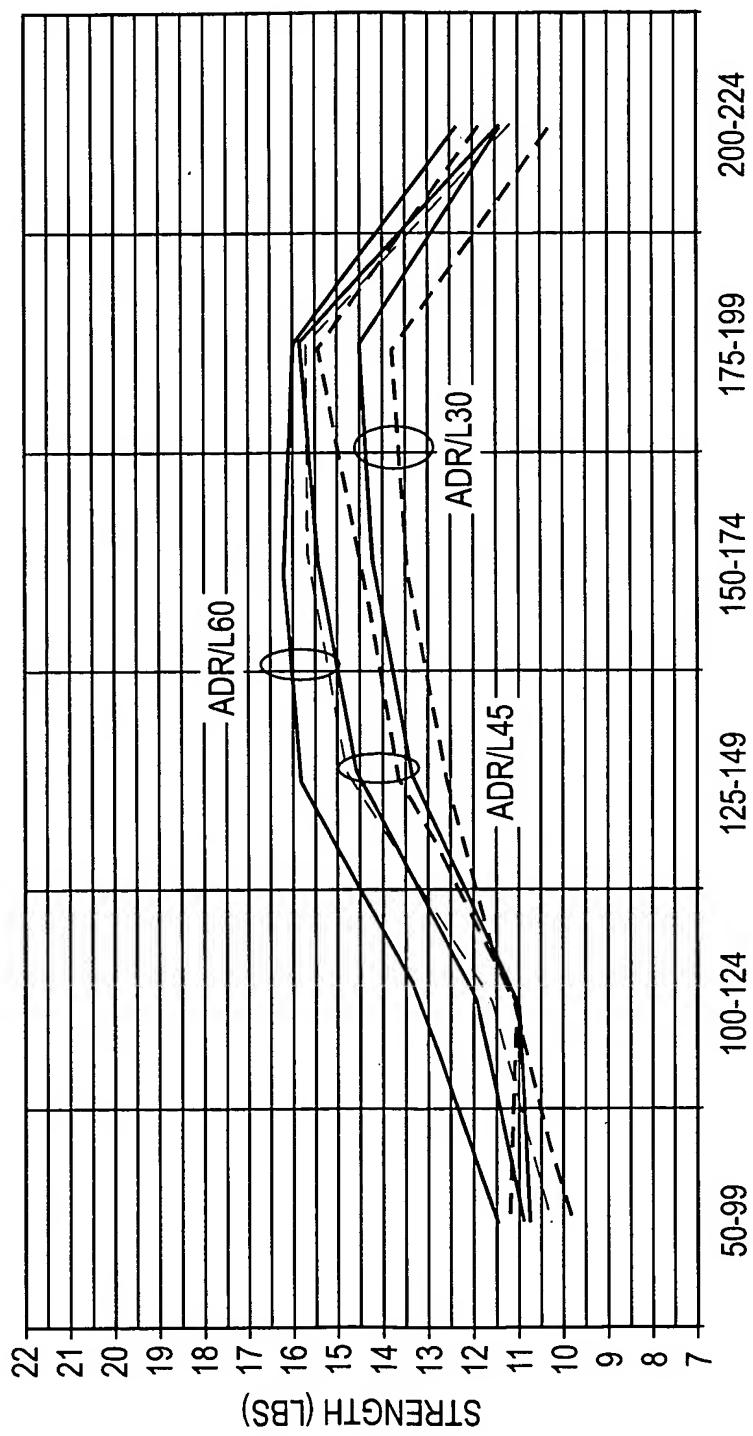


FIG. 29

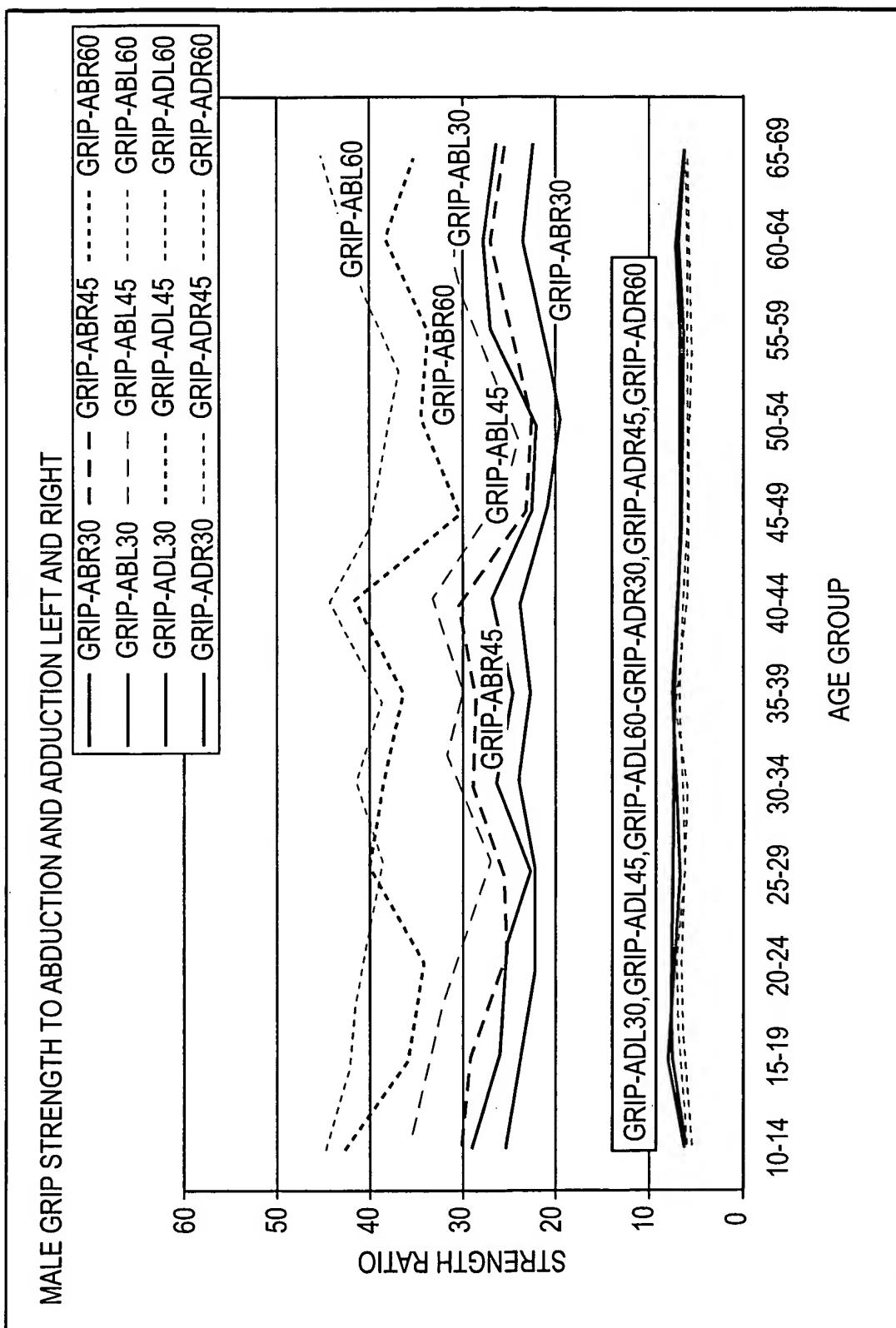


FIG. 30

REPLACEMENT SHEET

CORRELATION COEFFICIENTS FOR ALL SUBJECTS																			
		MALES																	
VARIABLES	WEIGHT	R-GRIP	L-GRIP	ABR30	ABR45	ABR60	ADR30	ADR45	ADR60	ABL30	ABL45	ABL60	ADL30	ADL45	ADL60				
AGE	0.41	-0.16	-0.16	-0.01	0.01	-0.02	-0.11	-0.08	-0.08	-0.07	-0.02	-0.03	-0.07	-0.11	-0.08				
WEIGHT	0.46	0.48	0.5	0.46	0.46	0.35	0.35	0.35	0.35	0.5	0.46	0.42	0.33	0.33	0.38				
R-GRIP				0.75	0.67	0.64	0.74	0.73	0.75	0.73	0.64	0.59	0.65	0.65	0.68				
L-GRIP					0.77	0.69	0.64	0.73	0.72	0.74	0.77	0.69	0.64	0.68	0.68				
ABR30						0.85	0.62	0.63	0.65	0.84	0.83	0.8	0.57	0.55	0.61				
ABR45							0.87	0.55	0.57	0.6	0.78	0.81	0.77	0.52	0.5	0.56			
ABR60								0.87	0.52	0.55	0.56	0.73	0.75	0.78	0.55	0.5	0.52		
ADR30									0.86	0.6	0.56	0.5	0.77	0.73	0.74				
ADR45										0.86	0.57	0.56	0.51	0.79	0.8	0.82			
ADR60											0.6	0.59	0.53	0.79	0.79	0.83			
ABL30												0.88	0.81	0.57	0.61	0.6			
ABL45													0.87	0.55	0.55	0.57			
ABL60														0.51	0.49	0.5			
ADL30														0.86	0.82				
ADL45															0.88	0.88			
FEMALES																			
VARIABLES	WEIGHT	R-GRIP	L-GRIP	ABR30	ABR45	ABR60	ADR30	ADR45	ADR60	ABL30	ABL45	ABL60	ADL30	ADL45	ADL60				
AGE	0.52	-0.04	-0.01	0.01	0.07	0	0.07	0.08	0.07	0.03	0.01	0.02	0.06	0.13	0.19				
WEIGHT		0.35	0.37	0.23	0.26	0.2	0.28	0.32	0.29	0.21	0.17	0.22	0.26	0.33	0.31				
R-GRIP				0.87	0.58	0.55	0.51	0.56	0.62	0.62	0.42	0.4	0.39	0.49	0.52	0.55			
L-GRIP					0.49	0.45	0.41	0.53	0.58	0.57	0.49	0.46	0.41	0.56	0.58	0.58			
ABR30						0.83	0.73	0.41	0.42	0.48	0.67	0.58	0.56	0.37	0.35	0.38			
ABR45							0.81	0.35	0.38	0.43	0.56	0.56	0.57	0.31	0.31	0.34			
ABR60								0.32	0.32	0.36	0.51	0.51	0.57	0.3	0.31	0.34			
ADR30									0.88	0.85	0.32	0.3	0.23	0.79	0.74	0.71			
ADR45										0.88	0.3	0.31	0.26	0.74	0.75	0.74			
ADR60											0.36	0.35	0.26	0.72	0.72	0.74			
ABL30												0.82	0.63	0.4	0.4	0.4			
ABL45													0.77	0.39	0.38	0.41			
ABL60														0.3	0.29	0.31			
ADL30															0.88	0.88			
ADL45																0.88			

FIG. 31